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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/650,327 | 08/28/2003 | Brian Mitchell Bass | RAL919990139US3 | 6884 |
| 25299 | 7590 | 05/05/2006 | EXAMINER | |
| IBM CORPORATION PO BOX 12195 DEPT YXSA, BLDG 002 RESEARCH TRIANGLE PARK, NC 27709 | | | LY, ANH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2162 | |

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/650,327

Applicant(s)

BASS ET AL.

Examiner

Anh Ly

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2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
4a) Of the above claim(s) 1-23 and 34-45 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 24-33 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/20/03 & 4/20/04 10/20/03
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is response to Applicants' Communications filed on 08/28/2003.
2. Claims 1-23 and 34-45 have been cancelled.
3. Claims 24-33 are pending in this application.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 24 is rejected under 35 U.S.C. 101 because the claimed invention is non-functional descriptive material, abstract idea, and no tangible result. The steps in the claimed invention are non-relationship or linking together. They are also lacking the step of how a full match for a variable length search key to be searched/occurred. The final result is not tangible. State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02 & AT&T, 172 F.3d at 1358, 50 USPQ3d at 1451. Applicants are advised to amend the claim language in the claim in order for an ordinary skill in the art to understand what the claimed invention is.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is: how the process of determining a full match for a variable length search key is. The body of the claim 1 does not include/prove/perform what set forth in the preamble of the claim. The body of the claim 1 does not have the process of determining a full match for a variable length search key and what the search key is.

DETAILED ACTION

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 24-33 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention. Patent No.: US 6,404,752 B1 issued to Allen, Jr. et al. (hereinafter Allen).

With respect to claim 24, Allen teaches an apparatus fabricated on a semiconductor substrate for determining a full match for a variable length search key (a

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network switch apparatus having components, control point processor, interface device, very large scale integrated (VLSI) circuit device or chip which has a semiconductor substrate, together being formed a network processor with tree search algorithm for determining variable length key matches: abstract, col. 5, lines 60-67 col. 6, lines 1-22, col. 7, lines 55-67 and col. 8, lines 1-22), comprising:

an embedded processor complex including a plurality of protocol processors and an internal control point processor that provide frame processing (protocol processors or network processors and control point processors that for performing data frame processing such as parsing and translation or transformation protocol: col. 4, lines 32-55);

a plurality of hardware accelerator co-processors accessible to each protocol processor and providing high speed pattern searching, data manipulation, and frame parsing (performing pattern searching based on the data frames that are dispatched to the next available protocol processor for performing frame lookups (col. 7, lines 55-67 and col. 8, lines 1-22);

a plurality of programmable memory devices that store a plurality of data structures that represent at least one search tree, wherein the data structures include a direct table, a pattern search control block and a leaf (a plurality of programmable device memory to store data structures: col. 5, lines 54-58 and col. 24, lines 22-35; see figs. 14 & 15: data structure with direct table with leaf, pattern search control block (PSCB): col. 25, lines 48-67); and

an control memory arbiter that controls the access of each protocol

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processor to the plurality of memory devices (memory devices: see fig. 1, 12 and 13, col. 7, lines 15-38).

With respect to claim 25, Allen teaches a tree search engine that operates in parallel with protocol processor execution to perform tree search instructions including memory reads and writes and memory range checking (tree search engine and fig. 13: col. 9, lines 12-16).

With respect to claim 26, Allen teaches wherein the plurality of memory devices further comprises at least one of internal static random access memory, external static random access memory, and external dynamic random access memory (col. 6, lines 5-22, col. 7, lines 15-38 and col. 21, lines 8-15).

With respect to claim 27, Allen teaches wherein the control memory arbiter manages control memory operations by allocating memory cycles between the plurality of protocol processors and the plurality of memory devices (col. 8, lines 47-52).

With respect to claim 28, Allen teaches wherein each protocol processor comprises a primary data buffer, a scratch pad data buffer and control registers for data store operations (col. 8, lines 53-67).

With respect to claim 29, Allen teaches further comprising a hash box component that performs a geometric hash function on the search key (the search algorithm for FM tree in fig. 14 and col. 25, lines 48-67).

With respect to claim 30, Allen teaches further comprising a programmable search key register and a programmable hashed key register (col. 25, lines 32-67 and col. 26, lines 1-28).

With respect to claim 31, Allen teaches further comprising a programmable color key register to enable sharing a single table data structure among a plurality of independent search trees (fig. 14 & 15: direct table and search trees stored on it: col. 25, lines 48-67, col. 26, lines 1-67 and col. 27, lines 1-45).

With respect to claim 32, Allen teaches wherein the contents of the color register, if enabled, are appended to the hash output to produce a final hashed key (col. 26, lines 32-65).


With respect to claim 33, Allen teaches wherein if the color register is not enabled, appending an equivalent number of zeros to the hash output to produce a final hashed key (col. 26, lines 32-65).

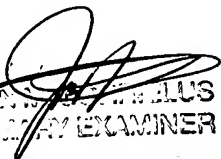
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Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An Ly whose telephone number is **(571) 272-4039** or via **fax number: (571) 273-4039 (Examiner's fax number)** or e-mail address: **(with your authorization by written statements) anh.ly@uspto.gov**. The examiner can normally be reached on TUESDAY – THURSDAY from 8:30 AM – 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on (571) 272-4107 or **Primary Examiner Jean Corrielus (571) 272-4032**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Any response to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, or faxed to: **Central Fax Center: (571) 273-8300**

ANH LY 
APR. 27th, 2006


JEAN CORRIELUS
PRIMARY EXAMINER